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Nineteenth special session
Item 8 of the provisional agenda*

REVIEW AND APPRAISAL OF THE IMPLEMENTATION OF AGENDA 21

Contribution of the United Nations Environment Programme to the special session

Note by the Secretary-General

1. In paragraph 8 of its resolution 51/181 of 16 December 1996, the General Assembly invited the Governing Council of the United Nations Environment Programme (UNEP) to include in its report to the Assembly at its special session information and views on ways to address, in a forward-looking manner, national, regional and international application of the principles contained in the Rio Declaration and the implementation of Agenda 21 in the interrelated issues of environment and development.

2. At its nineteenth session, the Governing Council requested the Executive Director of UNEP to transmit to the General Assembly at its special session the annexed report, which includes the Nairobi Declaration on the Role and Mandate of UNEP (sect. I), the note by the Executive Director to the Governing Council on preparations for the review and appraisal of Agenda 21 (sect. II) and the executive summary of Global Environment Outlook-1 (sect. III).

3. The Secretary-General has the honour to transmit the report to the General Assembly. In accordance with paragraph 6 of Assembly resolution 51/181, the present note will also be made available to the Commission on Sustainable Development at its fifth session for its consideration.

* A/S-19/1 (to be issued).

ANNEX

Contribution of the United Nations Environment Programme to the special session of the General Assembly for the purpose of an overall review and appraisal of the implementation of Agenda 21, 23-27 June 1997

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I. NAIROBI DECLARATION ON THE ROLE AND MANDATE OF THE UNITED NATIONS ENVIRONMENT PROGRAMME

Declaration of the ministers and heads of delegation attending the high-level segment of the nineteenth session of the Governing Council of the United Nations Environment Programme, held from 5 to 7 February 1997 in Nairobi 1/

We, the ministers and heads of delegation attending the nineteenth session of the Governing Council of the United Nations Environment Programme, held in Nairobi from 27 January to 7 February 1997,

Recalling the goal of the Rio Declaration on Environment and Development, 2/ which is to establish a new and equitable global partnership through the creation of new levels of cooperation among States, key sectors of society and people,

Reiterating our commitment to the implementation of the Rio Declaration, Agenda 21, and the Non-legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests, 3/ adopted by the United Nations Conference on Environment and Development, as well as other environmental conventions agreed upon in the Rio process,

Recognizing the progress made in the implementation of the Rio agreements,

Deeply concerned, nevertheless, at the continuing deterioration of the global environment, including the worsening trends in environmental pollution and the degradation of natural resources, as reflected in the Global Environment Outlook report of the United Nations Environment Programme, 4/

Aware of the rapid changes currently taking place in the world and the increasing complexity and fragmentation of the institutional responses to them, as well as the far-reaching significance of the concept of sustainable development which encompasses economic, social and environmental dimensions, supported by capacity-building, transfer of technology and financial resources to developing countries, in particular least developed countries,

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1/ As contained in the annex to decision 19/1 of 7 February 1997 of the United Nations Environment Programme Governing Council.

2/ Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992, vol. I, Resolutions Adopted by the Conference (United Nations publication, sales No. E.93.I.8 and corrigendum), resolution 1, annex II.

3/ Ibid., annex III.

4/ United Nations Environment Programme, Global Environment Outlook, (United Nations Environment Programme, Nairobi, 1997).

Convinced that a strong, effective and revitalized United Nations Environment Programme is essential to assist the international community in its efforts to reverse environmentally unsustainable trends,

Aware that the special session of the General Assembly for the purpose of an overall review and appraisal of the implementation of Agenda 21 offers a unique opportunity to review and appraise the follow-up to the United Nations Conference on Environment and Development and to confirm the revitalized role of the United Nations Environment Programme,

Determined to assist the General Assembly in this important task, and guided by the principles agreed in the Rio Declaration on Environment and Development,

Declare:

1. That the United Nations Environment Programme has been and should continue to be the principal United Nations body in the field of the environment and that we, the ministers of the environment and heads of delegation attending the nineteenth session of the Governing Council, are determined to play a stronger role in the implementation of the goals and objectives of the United Nations Environment Programme;

2. That the role of the United Nations Environment Programme is to be the leading global environmental authority that sets the global environmental agenda, that promotes the coherent implementation of the environmental dimension of sustainable development within the United Nations system and that serves as an authoritative advocate for the global environment;

3. That, to this end, we reaffirm the continuing relevance of the mandate of the United Nations Environment Programme deriving from General Assembly resolution 2997 (XXVII) of 15 December 1972 and further elaborated by Agenda 21. The core elements of the focused mandate of the revitalized United Nations Environment Programme should be the following:

(a) To analyse the state of the global environment and assess global and regional environmental trends, provide policy advice, early warning information on environmental threats, and to catalyse and promote international cooperation and action, based on the best scientific and technical capabilities available;

(b) To further the development of international environmental law aiming at sustainable development, including the development of coherent interlinkages among existing international environmental conventions;

(c) To advance the implementation of agreed international norms and policies, to monitor and foster compliance with environmental principles and international agreements and stimulate cooperative action to respond to emerging environmental challenges;

(d) To strengthen its role in the coordination of environmental activities in the United Nations system in the field of the environment, as well as its role as an Implementing Agency of the Global Environment Facility, based

on its comparative advantage and scientific and technical expertise;

(e) To promote greater awareness and facilitate effective cooperation among all sectors of society and actors involved in the implementation of the international environmental agenda, and to serve as an effective link between the scientific community and policy makers at the national and international levels;

(f) To provide policy and advisory services in key areas of institution-building to Governments and other relevant institutions;

4. That, for the effective discharge of its focused mandate and to ensure the implementation of the global environmental agenda, we have decided to improve the governance structure of United Nations Environment Programme. In doing so, we have been guided by the following considerations:

(a) The United Nations Environment Programme should serve as the world forum for the ministers and the highest-level government officials in charge of environmental matters in the policy and decision-making processes of the United Nations Environment Programme;

(b) Regionalization and decentralization should be strengthened through the increased involvement and participation of regional ministerial and other relevant forums in the United Nations Environment Programme process, complementary to the central coordinating role of the Programme's headquarters in Nairobi;

(c) The participation of major groups should be increased;

(d) A cost-effective and politically influential inter-sessional mechanism should be designed;

5. That, in order to operationalize its mandate, the revitalized United Nations Environment Programme needs adequate, stable and predictable financial resources and, in this regard, we recognize the interrelationship between excellence, relevance and cost-effectiveness in programme delivery, confidence in the organization and a consequent increase in the competitive ability of the Programme to attract funding;

6. That ways must be sought to assure financial stability for the implementation of the global environmental agenda. In this regard, the predictability and early notification of expected contributions to the Environment Fund would facilitate an effective planning and programming process;

7. That we reaffirm the central importance of the Environment Fund as the principal source of financing for the implementation of the programme of the United Nations Environment Programme;

8. That we are convinced that the expeditious implementation of our decisions and the principles contained in this Declaration, adopted in the year of the twenty-fifth anniversary of the founding of the United Nations Environment Programme, will revitalize and strengthen the organization and place it at the forefront of international efforts to protect the global environment

for present and future generations and in the pursuit of sustainable development;

9. That we request the President of the Governing Council to present this Declaration to the high-level segment of the fifth session of the Commission on Sustainable Development and to the special session of the General Assembly for the purpose of an overall review and appraisal of the implementation of Agenda 21.

II. NOTE BY THE EXECUTIVE DIRECTOR TO THE GOVERNING COUNCIL OF THE UNITED NATIONS ENVIRONMENT PROGRAMME ON PREPARATIONS FOR THE 1997 REVIEW AND APPRAISAL OF AGENDA 21

A. State of the environment 5/

1. Any assessment of progress since the United Nations Conference on Environment and Development (UNCED) must begin with the environment. As the first Global Environment Outlook report concludes: from a global perspective, the environment has continued to deteriorate over the last decade, and significant environmental problems remain deeply embedded in the socio-economic fabric of nations in all regions (UNEP/GC.19/26).

2. In regions where food security and poverty alleviation are priorities, such as Africa, West Asia and parts of the Asia-Pacific region and Latin America, the primary concern relating to land is its availability, the prevention and control of land degradation, and efficient land and water management. The limited availability of arable land and loss of land to urban expansion are of particular importance to small island States and the West Asia region. Degradation of drylands is an urgent global problem, placing some one billion people in 110 countries at risk, mainly in developing regions. In highly industrialized regions, ameliorating soil contamination and combating acidification are priorities.

3. The decade of the 1980s witnessed a decline of some two per cent in the area of the world's forests and wooded land. While the area under forest cover in developed regions remained fairly unchanged over the decade, natural forest cover in developing regions declined by eight per cent. In Europe, air pollution (including acid rain), pests and diseases, and forest fires were the main causes of forest degradation. Biological diversity is of particular concern in both the Latin American and Caribbean region and the Asia and Pacific region, which together house 80 per cent of the world's ecologically megadiverse countries. As yet no region-based assessment of the state of the world's biological diversity is available, and of a working figure of 13 million species, only 13 per cent have been scientifically described. Worldwide habitat loss and fragmentation, the lack of biological corridors and the decline in biological diversity outside protected areas constitute the primary threats to biological diversity.

4. All regions experience problems related to either groundwater or surface water, or both. Every day, 25,000 people die as a result of poor water quality. Some 1,700 million people, more than one third of the world's population, are without a supply of safe water and, in the absence of an adequate sanitation infrastructure, the problem of pathogenic pollution is severe in many developing countries. An estimated one quarter of the world's population will suffer from chronic water shortages in the beginning of the next century. The development

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5/ Originally issued in document UNEP/GC.19/26.

and efficient management of water resources are of particular concern in West Asia, Africa and Asia and the Pacific. In Europe and North America, the protection of water resources from contamination, acidification and eutrophication feature high on the agenda. Water supply to regions hosting megacities is a worldwide concern, mainly with regard to groundwater resources, the intrusion of salt into freshwater supplies and land subsidence. More than 1,500 million people depend on groundwater for their drinking water. Other global priorities are the equitable distribution of water between riparian countries sharing international river basins and the impacts of major dams and diversion projects. By the year 2000, more than 60 per cent of the world's total stream flow will be regulated by dams.

5. About 60 per cent of the global population lives within 100 kilometres of the coastline and more than three billion people rely on coastal and marine habitats for food, building sites, transportation, recreation, and waste disposal. One third of the world's coastal regions are at high risk of degradation, particularly from land-based activities. European coasts are the worst affected, with some 80 per cent at risk, followed by Asia and the Pacific, with 70 per cent at risk. In Latin America, some 50 percent of the mangrove forests are affected by forestry and aquaculture activities. Oil spills are particular threats in West Asia and the Caribbean, while infrastructure development for the tourism industry is placing severe stress on natural coastal areas around the world, particularly in small island developing States. There is widespread anxiety in Asia and the Pacific, North America, Europe and West Asia regarding the over-exploitation of marine fisheries and the consequent decline in stocks of commercial fish species. Globally, over 60 per cent of marine fisheries are heavily exploited.

6. Air pollution problems are multifaceted and pervasive. Acid rain and transboundary air pollution, once considered a problem only in Europe and parts of North America, are now increasingly apparent in parts of Asia and the Pacific and Latin America. Large regions are at risk from the effects of both climate change and acidification. All major cities in the world suffer urban air quality problems. In Eastern Europe, air quality is considered the most serious environmental problem. Despite coordinated action worldwide, damage to the ozone layer continues faster than expected, with the next ten years predicted to be the most vulnerable. Non-compliance and growth in illegal trade in ozone depleting substances are emerging problems. All regions express concern over global warming but special emphasis is placed by the developing countries on the need for adaptive mechanisms to cope with accompanying climate variability and sea-level change. The rapidly rising demand for energy to fuel economic development will aggravate these problems, particularly in Asia and the Pacific, where a 100 per cent increase in energy use is predicted for the period 1990 - 2010 and in Latin America, with a predicted energy growth of 50 - 77 per cent for the same period. It appears that, for the foreseeable future, fossil fuels will continue to be the primary source of energy.

7. The impacts of current consumption and production patterns and associated waste generation, particularly on personal health and well being, are high on the priority list of both North America and Western Europe, and of concern to the other regions. Subregions with emerging economies, such as those of Eastern

Europe, South-East Asia, and parts of Latin America and West Asia, face problems associated with rapid industrialization. Rising levels of pollutants pose serious problems of acidification, urban air quality deterioration and transboundary pollution, all increasing health risks. The accumulation of radioactive waste and the continued impacts of the Chernobyl disaster and the effects of past radioactive spills remain of particular concern in Eastern European countries. These problems are compounded by rapidly increasing urbanization, particularly in coastal zones, and the widening gap between the rich and the poor. More than half of humankind will live in urban areas by the end of the century, a figure that will increase to 60 per cent by 2020, with Europe, Latin and North America having more than 80 per cent of their population living in urban areas.

8. The polar regions, representing the largest remaining natural ecosystems on Earth are also coming under increasing stress, particularly from long-range pollutant transport and deposition. Their crucial role in climate regulation and the vulnerability of their fauna and flora warrant special attention.

9. While this assessment may contain no surprises, the following fundamental global environmental trends demand concerted and more timely attention:

(a) The use of renewable resources, land, forest, freshwater, coastal areas, fisheries and urban air, is beyond their natural regeneration capacity and therefore unsustainable;

(b) Greenhouses gases are still being emitted at levels higher than the stabilization target internationally agreed upon under the United Nations Framework Convention on Climate Change;

(c) Natural areas, and their attendant biological diversity, are bound to diminish as a result of the expansion of agricultural land and human settlements;

(d) The increasing, pervasive use and spread of chemicals are causing major health risks, environmental contamination and disposal problems;

(e) The continued heavy reliance on hydrocarbons in the energy sector to fuel economic development is unsustainable;

(f) Rapid unplanned urbanization, particularly in coastal areas, is placing severe major stress on adjacent ecosystems; and

(g) A better scientific understanding is needed of the causal relationships between socio-economic driving forces and their environmental impacts; in particular, scientific analysis and subsequent policy recommendations are urgently required to deal with complex interactions among global biological cycles, long-term chemical impacts and climatic changes.

An effective policy response to these trends will require a blend of policy instruments that address the social fabric of life, ensure effective institutional arrangements, improve the economy, and protect the environment.

B. Implementation of Agenda 21 6/

10. Since UNCED, UNEP has continued to promote sound environmental management and sustainable development, through the provision of information, guidance and assistance on environmental assessment, policy and management, and by building consensus on international environmental policy and action. The UNEP Governing Council, with careful deliberation, consolidated and prioritized the Environment Programme to enable UNEP to respond to the needs of countries and institutions in implementing Agenda 21. UNEP took steps to ensure that the content, focus and manner of delivery of the Environment Programme were in line with the Rio Principles.

11. Through a process of reflection, consultation and discussion, UNEP defined its mission, recast the focus and content of its programme and revised the modalities of its work with an emphasis on devolution, partnerships, decentralization and the cultivation of new constituencies while strengthening old ones. The integrated programme was refocused around four environmental problems: sustainable management and use of natural resources; sustainable production and consumption; a better environment for human health and well-being; and globalization and the environment. Not only was it necessary for UNEP to ensure that its work was scientifically and technically sound, but it also had to be developed and delivered to facilitate its partners' action for the environment and for sustainable development.

12. As a result, noteworthy features of the implementation of Agenda 21 by UNEP have been: strengthened and extended partnerships with international and intergovernmental institutions and the development community; a broadening of constituencies beyond non-governmental organizations to include business, industry, women, youth and parliamentarians; a more decentralized and participatory approach to programme development and delivery with accentuated roles for the UNEP regional offices; greater integration in the design and delivery of programmes such as freshwater, marine resources and coastal areas; land, forests and biodiversity; environmental information, assessment and toxic chemicals; a deliberate effort to relate programme policy and design to promote sustainable development, including its economic, social and human aspects, such as poverty, women, population, equity and international economic cooperation participation, a deliberate emphasis on responding to the needs of countries and institutions, achieving and monitoring results, and accountability (UNEP/GC.19/INF.17).

13. Information and database development and networking in various areas of environmental concern have helped UNEP respond more effectively to the needs of countries and institutions and promote the successful experiences of others. UNEP will pursue its efforts in this area further, drawing upon the capabilities of modern information technology, and its own strengthened regional presence. The traditional environmental assessment and monitoring work of UNEP is also becoming more closely integrated with the analysis of trends, impacts and driving forces and, consequently, becoming more policy relevant and action-

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6/ Originally issued in document UNEP/GC.19/INF.17.

oriented. UNEP will continue to build bridges and enhance the dialogue between science and policy. UNEP has to sustain and intensify its networking with the scientific and technological communities to remain abreast of their work and to help orientate the direction of research, so that it will contribute effectively to addressing priority problems.

14. UNEP has given priority in capacity-building to providing technical and policy guidance in environmental information, assessment, database development, environmental legislation and institutions. It is essential that more attention is given to the building of capacities for policy development which will help countries integrate environment and development considerations in decision-making.

15. The role of UNEP as a builder of consensus among Governments on environmental policy and action will become increasingly critical as competition over natural resource use and access intensifies, and as transboundary environmental impacts significantly affect the quality of life. Equally important, however, will be the systemwide promotion of compliance and the enforcement of international environmental agreements. The linkage of global and regional environmental objectives with local and national development needs must be systematically factored into projects and programmes aimed at implementing such agreements.

16. In the course of implementing its Agenda 21 responsibilities UNEP has learned some practical lessons, including the following:

(a) Considerably more emphasis needs to be given to identifying and analysing the development of policies, programmes and practices to integrate environment and development in action at the country level and to provide the benefit of such knowledge to other countries and institutions;

(b) The UNEP contribution must be reexamined to ensure that substantive value is added and that the potential role of partners, including the private sector and non-governmental organizations is mobilized;

(c) Preventive and anticipatory approaches, with particular attention to "win-win" avenues, enhanced economic efficiency, social development and better environmental management, must be emphasized;

(d) Relationships with constituencies, including civil society in general and the financial services sector in particular, must continue to be broadened and strengthened;

(e) The institutional and financial means of implementation must be secured in the process of building intergovernmental agreements;

(f) Achievement milestones for specific responsibilities under Agenda 21 should be set and progress towards them monitored regularly;

(g) An integrated, holistic approach to programme development must be pursued. Programme activities need not be developed and implemented in all

areas all the time: in some areas it is sufficient to perform a review and information networking function; in others, to monitor progress; and in others still to advocate policy options and mobilize action. Resource allocation needs to become more sensitive to such distinctions to deliver the most effective service to countries with available resources;

(h) Strong emphasis should be placed on issues-specific, action-oriented and policy-connected environmental advocacy, rather than on generic awareness-raising; and

(i) Attention needs to be given to issues concerning the prevention and mitigation of conflicts relating to natural resource use and access and transboundary environmental impacts.

III. EXECUTIVE SUMMARY OF GLOBAL ENVIRONMENT OUTLOOK-1 7/

17. This first report in the biennial Global Environment Outlook series was initiated in response to the environmental reporting requirements of Agenda 21 and to the UNEP Governing Council decision of May 1995 requesting production of a new, comprehensive report on the state of the world environment in time for the UNEP Governing Council in January 1997. The decision recognized the need to advance consensus on several essential environmental issues and on the implementation of the recommendations of Agenda 21. The report is a snapshot of an ongoing worldwide environmental assessment process.

18. A regional and participatory process was used to produce Global Environment Outlook-1. Input was solicited from 20 regional collaborating centres, United Nations organizations and independent experts. Draft chapters benefited from discussions and recommendations of participants in regional consultations, which also provided valuable suggestions for the improvement and future direction of the Global Environment Outlook series. In later reports, the regional inputs will be strengthened through the further development of the global network of collaborating centres.

A. Global overview

19. The Global Environment Outlook-1 report shows that significant progress has been made in the last decade in confronting environmental challenges in both developing and industrial regions. Worldwide, the greatest progress has been in the realm of institutional developments, international cooperation, public participation and the emergence of private-sector action. Legal frameworks, economic instruments, environmental impact assessment methodologies, environmentally sound technologies and cleaner production processes have been developed and applied. As a result, several countries report marked progress in curbing environmental pollution and slowing the rate of resource degradation, as well as reducing the intensity of resource use. The rate of environmental degradation in several developing countries has been slower than that experienced by industrial countries when they were at a similar stage of economic development.

20. Nevertheless, from a global perspective, the environment has continued to degrade during the last decade, and significant environmental problems remain deeply embedded in the social and economic fabric of nations in all regions. Progress towards a global sustainable future is just too slow and the necessary sense of urgency is lacking. Internationally and nationally, the funds and political will are insufficient to halt further global environmental degradation and to address the most pressing environmental issues - even though the technology and knowledge are available to do so. The recognition of environmental issues as necessarily long-term and cumulative, with serious global and security implications, remains limited. The reconciliation of

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7/ Originally issued in document UNEP/GC.19/26.

environment and trade regimes in a fair and equitable manner still remains a major challenge. The continued preoccupation with immediate local and national issues and a general lack of sustained interest in global and long-term environmental issues remain major impediments to environmental progress internationally. Global governance structures and global environmental solidarity remain too weak to make progress a world-wide reality. As a result, the gap is widening between what has been achieved thus far and what is realistically needed.

21. In the future, the continued degradation of natural resources, shortcomings in environmental responses, and renewable resource constraints may increasingly lead to food insecurity and conflict situations. Changes in global biogeochemical cycles and the complex interactions between environmental problems such as climate change, ozone layer depletion, and acidification may have impacts that will confront local, regional, and global communities with situations for which they are quite unprepared. Previously unknown risks to human health are becoming evident from the cumulative and persistent effects of a whole range of chemicals, particularly the persistent organic pollutants (POPs). The effects of climate variability and change are already increasing the incidence of familiar public health problems and leading to new ones, including a more extensive reach of vector-borne diseases and a higher incidence of heat-related illness and mortality. Global Environment Outlook-1 substantiates the need for the world to embark on major structural changes and to pursue with vigour environmental and associated social and economic policies.

B. Regional status and trends

22. Global Environment Outlook-1 confirms both striking similarities and marked differences among regions in terms of the environmental issues which are of primary concern today. Although poverty and the growing global population are often targeted as responsible for much of the degradation of the world's resources, other factors - such as wealth, the inefficient use of resources (including those of others), waste generation, pollution from industry, and wasteful consumption patterns - are equally driving us towards an environmental precipice.

23. In the report, prominence is initially given to issues associated with poverty alleviation, food security and development, namely, natural resource management to control land degradation, provide an adequate water supply, and protect forests from overexploitation and coastal zones from irreversible degradation. Attention is then given to issues associated with increasing industrialization. Such problems include uncontrolled urbanization and infrastructure development, energy and transport expansion, the increased use of chemicals, and waste production. More affluent societies focus on individual and global health and well-being, the intensity of resource use, heavy reliance on chemicals and the impact of climate change and ozone destruction, as well as remaining alert to the long-term protection needs of natural resources.

C. Regional policy responses

24. The review of policy responses to environmental issues in different regions indicates that, typically, these responses focus first on institutional and constitutional issues, and then on the implementation and enforcement of often disjointed sectoral environmental legislation and regulations. Subsequent actions concentrate on developing comprehensive strategic and integrated plans for the protection of the environment, such as national environmental action plans, and an array of concerted command-and-control measures. Later, attention is given to introducing market-based incentives, creating conducive environments for voluntary, flexible, and innovative actions and stimulating increased participation and commitment by all sectors of society.

25. Progression through the cascade of policy responses is often constrained in developing regions by weak institutions, insufficient human and financial resources, ineffective legislation, and a lack of compliance monitoring and enforcement capabilities. In other instances, environmental institutions and regulations have been introduced at the request of external forces, such as international conventions and strategies, donor requirements, and structural adjustment programmes, and are only later internalized by countries.

26. In the more developed regions of the world, experience with environmental management and conservation is extensive and of longer duration. Today, countries are increasingly using a mix of command-and-control policies and market-based incentives to achieve cleaner and more resource-efficient production systems and to modify consumers' attitudes. More integrated approaches that rely on cleaner production processes and accounting on a cradle-to-grave basis have not yet been used to their full potential anywhere.

27. Although there is repeated acknowledgement of both the vicious cycle of poverty and its intrinsic linkages with the environment and the urgency to address poverty alleviation, little evidence emerged from the regional reports that effective and concerted actions have been taken since Rio to ensure that environmental policies benefit the poorest members of society. A vacuum still remains at the national level for linking environmental protection to social investment, such as education, better health care and employment generation for the poor, especially women.

28. Empowerment of communities and the growth of environment-oriented non-governmental organizations in civil society are increasingly recognized in all regions as powerful mechanisms to advance sustainable development. Another heartening sign is the tendency to strengthen regional and subregional cooperation worldwide. This might well prove to be one of the most powerful mechanisms to move national and global institutions forward towards sustainable development.

D. Looking to the future

29. The first Global Environment Outlook report concludes with an exploration, based on model analyses, of what we might expect in the future for a selected number of environmental issues if no major policy reforms are initiated. The

results in this final chapter confirm trends revealed by the regional chapters. They highlight the integrated nature of the environment and underscore the need for a more systematic analysis of linkages between environment, social, economic, institutional, and cultural sectors and among different environmental issues, such as biodiversity, climate, land, and water.

E. The way ahead

30. Worldwide, rapid and profound changes are occurring in many social, institutional, and economic systems. The continued impoverishment of large parts of the global population, increased disparities both within and between nations, and rapid globalization - particularly through developments in information technology, transport, and trade regimes - are observed. In many countries, there are trends towards the decentralization of environment responsibilities from national to subnational authorities, an increasing role for the transnational corporations in environmental stewardship and policy development, and a move towards integrated environmental policies and management practices. The increased willingness of Governments to cooperate on a global basis is evidenced by the large number of world summits in the last decade. The question arises, however, as to how this willingness is translated into concrete and effective actions. There is greater recognition and popular insistence that the wealth of nations and the well-being of individuals lie not just in economic capital, but in social and natural capital as well.

31. Against this background of change, a number of fundamental global environmental trends emerge in the Global Environment Outlook-1 report:

(a) The use of renewable resources - land, forest, fresh water, coastal areas, fisheries, and urban air - is beyond their natural regeneration capacity and is therefore unsustainable;

(b) Greenhouses gases are still being emitted at levels higher than the stabilization target internationally agreed upon under the United Nations Framework Convention on Climate Change;

(c) Natural areas and the biodiversity they contain are bound to diminish as a result of the expansion of agricultural land and human settlements;

(d) The increasing, pervasive use and spread of chemicals to fuel economic development is causing major health risks, environmental contamination, and disposal problems;

(e) Global developments in the energy sector are unsustainable;

(f) Rapid, unplanned urbanization, particularly in coastal areas, is placing major stress on adjacent ecosystems; and

(g) The complex and often little understood interactions among global biogeochemical cycles are leading to widespread acidification, climate variability, changes in the hydrological cycles, and the loss of biodiversity,

biomass, and bioproductivity.

32. There are also wide-spread social trends, intrinsically linked to the environment, that have negative feedback effects on environmental trends, notably:

(a) An increase in inequality, both between and within nations, in a world that is generally healthier and wealthier;

(b) A continuation, at least in the near future, of hunger and poverty despite the fact that, at the global level, sufficient food is available; and

(c) Greater human health risks resulting from continued resource degradation and chemical pollution.

33. Four key priority areas emerge from the Global Environment Outlook-1 report for immediate, enhanced, and concerted action by the international community if the world is to reverse the negative environmental trends highlighted in the Global Environment Outlook-1 report. Economic cost-benefit analyses will need to be conducted in conjunction with concerted international action in these areas:

(a) Energy efficiency and renewable energy resources

34. Current patterns of energy use require drastic changes, because of their destructive impacts on land and natural resources, climate, air quality, rural and urban settlements, and human health and well-being. The need for ever higher levels of energy to fuel economic development in all regions of the world and the absence of significant worldwide advances in the development and application of alternative energy sources and increased energy efficiency will inevitably exacerbate environmental degradation. Alternative energy sources need to be vigorously pursued and their application enhanced. Energy efficiency still needs to be greatly improved, and emissions need to be reduced. Consideration should be given to declaring an energy decade, or even decades, until such time as energy sustainability is reached.

(b) Appropriate and environmentally sound technologies worldwide

35. Appropriate technological improvements, which result in more effective use of natural resources, less waste, and fewer pollutant by-products, are required in all economic sectors. Truly global availability and worldwide application of best available and appropriate technology and production processes, including best traditional practices, need to be ensured through the exchange and dissemination of know-how, skills and technology and through appropriate finance mechanisms. Despite years of deliberation, countries have yet to agree on how to reach consensus on international mechanisms to serve the vital interests of both developers of technologies and those countries that need access to them, as well as on international finance mechanisms.

(c) Global action on fresh water

36. Water will be the major impediment to further development in several regions. Greater efforts are needed to resolve issues related to land-based sources of pollution, non-point source runoff from agricultural and urban areas, protection of groundwater reserves, water pricing, the impact of development projects on ecosystems, and competing demands for water among different social sectors, among rural and urban communities, and among riparian countries. Globally, a much stronger, more integrated and extensive programme on water is required, including action to address food-related and health-related freshwater issues.

(d) Benchmark data and integrated assessments

37. Assessments are required continually to guide rational and effective decision-making for environmental policy formulation, implementation, and evaluation at local, national, regional, and global levels. To improve the global capability for keeping the environment under continuous review, urgent action is required on several fronts:

(i) Investment in new and better national data collection and harmonization, and in the acquisition of global datasets;

(ii) Increased understanding of the linkages among different environmental issues, as well as of the interactions between environment and development;

(iii) Enhanced capabilities for integrated assessment and forecasting, and the analysis of the environmental impact of alternative policy options;

(iv) Better translation of scientific results into a format readily usable by policy-makers and the general public; and

(v) The development of cost-effective, meaningful and useful methods for monitoring environmental trends and policy impacts at local, national, regional, and global levels.

38. To achieve advances in one or all of these key areas for action, a change in the hearts and minds of everyone will be required, along with a worldwide transition towards resource equity and resource efficiency. The necessary financial resources will have to be made available at national and international levels. Estimates have indicated that if 2-3 per cent of gross domestic product (GDP) could be devoted to environmental education, protection, and restoration, great strides could be made in halting the progress of major negative environmental trends. Implementing the pledges made at Rio to increase development aid to the equivalent of 0.7 per cent of industrial countries' GDP and to provide new additional funding is the prerequisite for initiating action to reverse global environmental degradation.